

99-D-104, Protection of Real Property (Roof Reconstruction-Phase II) , Lawrence Livermore National Laboratory, Livermore, California

(Changes from FY 2000 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

None.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost (\$000)	Total Project Cost (\$000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1999 Budget Request (<i>Preliminary Estimate</i>)	1Q 1999	1Q 2000	3Q 1999	4Q 2001	19,900	19,930
FY 2000 Budget Request	3Q 1999	2Q 2003	4Q 1999	4Q 2003	19,900	19,970
FY 2001 Budget Request (<i>Current Baseline Estimate</i>)	4Q 1999	2Q 2003	4Q 1999 ^a	4Q 2003	19,900	19,970

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
1999	2,500	2,500	419
2000	2,391 ^b	2,391	3,487
2001	2,800	2,800	3,136
2002	2,800	2,800	3,275
2003	9,409	9,409	6,251
2004	0	0	3,332

^a Design and construction is planned as five separate packages, each including 1 to 4 buildings. Construction on each package will begin upon completion of the design for that package, while design continues on the remaining packages.

^b Original appropriation was \$2,400,000. This was reduced by \$9,000 for the FY 2000 rescission enacted by P.L. 106-113.

3. Project Description, Justification and Scope

This project is the second of three phases of the LLNL roof replacement program. The first Phase is funded under 96-D-102. Phase II addresses 11 Weapons Stockpile Stewardship and Management Program buildings which require complete roofing system replacement along with the replacement of associated roof mounted equipment and piping systems which have deteriorated beyond economical repair. This is required in order to maintain and protect the integrity of the facilities and to assure that programmatic work can proceed without the risk of serious damage to the buildings or the programmatic efforts contained within. Work includes buildings: B111, B113, B121, B141, B194, B231, B241, B251, B281, B321, and B332. In all cases, the roofing systems have exceeded their 20-year design life by 11 to 23 years. The same holds true for most of the roof mounted equipment and piping systems as they are original equipment, again with an average design life of 20 years. Both the roofing and mechanical systems have deteriorated to the point where normal repair is no longer a viable alternative.

The 11 roofs in this project are experiencing severe deterioration problems including membrane failure, and the associated roof mounted mechanical equipment is also showing high levels of unreliable operation which adversely effect the support to the programmatic effort. As stated, normal maintenance procedures no longer are effective to maintain weather integrity of the roofing systems, to the point that leaks in the roofing system are jeopardizing experiments, experimental data and equipment. The impact from not replacing the roofing and mechanical equipment systems will result in excessive maintenance and repair costs. In addition, the adverse programmatic impact could cost the Lab and Defense Programs significant dollars in lost production.

Operating expense budgets fund maintenance at a level of required repair, but not at the level required to replace roofs and roof mounted mechanical equipment. Since these 11 buildings are required to support critical Weapons Stockpile Stewardship and Management Program missions, capital funding is requested for the replacement of the roofs and associated roof mounted mechanical equipment.

| In FY 2001, buildings 121 and 141 will be reroofed.

Project Milestones:

	FY 1999: Package No. 1 (Building 111 and 194)	
	Start Design	4Q
	Complete Design	4Q
	Start Construction	4Q
	FY 2000: Complete Construction Package No. 1	1Q
	Package No. 2 (Buildings 241 and 332)	
	Start Design	1Q
	Complete Design	2Q
	Start Construction	3Q
	Complete Construction	4Q
	FY 2001: Package No. 3 (Building 121 and 141)	
	Start Design	1Q
	Complete Design	2Q
	Start Construction	3Q
	Complete Construction	4Q

4. Details of Cost Estimate

(dollars in thousands)		
	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications - \$640)	947	770
Design Management Costs (0.1% of TEC)	29	29
Project Management Costs 0.3% of TEC)	50	50
Total Design Costs (5.2% of TEC)	1,026	849
Construction Phase		
Other Structures	9,018	9,000
Standard Equipment	3,672	3,810
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	2,160	2,183
Construction Management (2.2% of TEC)	444	444
Project Management (4.3% of TEC)	857	844
Total Construction Costs (81.2% of TEC)	16,151	16,281
Contingencies		
Design Phase (1.0% of TEC)	200	207
Construction Phase (12.7% of TEC)	2,523	2,563
Total Contingencies (13.7% of TEC)	2,723	2,770
Total, Line Item Costs (TEC) ^a	19,900	19,900

5. Method of Performance

The Laboratory proposes a new approach to the implementation of this project. Mechanical and electrical modifications will be completed prior to reroofing construction start. Modifications will be accomplished using LLNL personnel. The construction contract is planned to be a unit price based contract with standard construction details. Change order processing and negotiations will be greatly simplified. This new approach should greatly reduce the cost of engineering and design.

^a Escalation rates taken from FY 1999 DOE escalation multiplier tables. Current estimate based on Conceptual Design Report of March 1997.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1999	FY 2000	FY 2001	Outyears	Total
Project Cost						
Facility Costs						
Design	0	12	315	271	628	1,226
Construction	0	407	3,172	2,865	12,230	18,674
Total, Line item TEC	0	419	3,487	3,136	12,858	19,900
Total Facility Costs (Federal and Non-Federal)	0	419	3,487	3,136	12,858	19,900
Other Project Costs						
Conceptual design costs	30	0	0	0	0	30
NEPA documentation costs	2	0	0	0	0	2
Other ES&H costs	38	0	0	0	0	38
Total, Other Project Costs	70	0	0	0	0	70
Total Project Cost (TPC)	70	419	3,487	3,136	12,858	19,970

7. Related Annual Funding Requirements

(FY 2003 dollars in thousands)

	Current Estimate	Previous Estimate
Total related annual funding (operating from FY 2003 through FY 2022)	0	0